

SOME NOTES ON *OXALIS CRISPULA* SOND. AND *OXALIS STENOPTERA* TURCZ., WITH DESCRIPTIONS OF NEW VARIETIES OF THESE SPECIES.

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Among the less known *Oxalis* included in the *Flora Capensis*, Vol. I, are the species *O. crispula* Sond. (23) and *O. stenoptera* Turcz. (*O. glaucovirens* Sond.) (62). Although these two species are in no way related to one another, it is a curious coincidence that a variety of the latter, *O. stenoptera*, var. *undulata* Salter, var. nov., which is here described, is superficially very similar in appearance to *O. crispula*, both plants having yellow flowers and oblong crinkled leaflets. This variety is exemplified by the specimen *Schlechter* 8197, Karee Berge, which is probably in many herbaria under the name *O. crispula*.

Some new varieties of these two species are described in the following paper and since the existing descriptions* of the typical forms were made from Zeyher's poor specimens and omitting as they do nearly all the characters which show their true affinities, revised and more complete analyses are now given, together with some notes on their real affinities.

I. *O. CRISPULA* Sond.

O. crispula is closely related to the large and variable group of plants with oblong or rotund leaflets, many of which were figured by Jacquin, and which Sonder brought together under one species, renaming it *O. mutabilis* Sond. I am inclined to agree with him in this amalgamation, especially after finding a number of other variants and intermediates, but the name *mutabilis* is illegitimate by modern rules and it is proposed to revert to the name *O. ambigua* Jacq. for this species.

O. crispula is perhaps little more than a variety of *O. mutabilis*, but since it is so readily distinguished by its crinkled leaflets and has itself

* In *Pflanzenreich*, Oxalidaceae (1930), R. Knuth, who does not appear to have seen either of the types, merely copies the existing errors in the case of *O. stenoptera*, while in the case of *O. crispula* his description evidently applies in part to the specimen *Schlechter* 8197, referred to above, which is not *O. crispula* at all.

It should be noted that the sub-section *Tripartitae*, sub-series *Oblongae* in this work is quite artificial and many of the species therein are closely related to or are even varieties of those in the sub-section *Rotundatae*.

a distinct variety, it is considered most convenient to retain it in its specific rank.



FIG. 1. *Oxalis crispula* Sond. 1. Petal $\times 1\frac{1}{2}$. 2. Gynaecium $\times 6$. 3. Bulb natural size. 4. Plant, natural size. 5. Sepal $\times 5$. 6. Androecium $\times 6$. 7. Leaf of *O. crispula* var. *glandulosa* Salter $\times 2$. (Salter 932 A). Del. T. M. Salter.

O. crispula Sond., emend. Salter. Rather densely hairy with simple hairs, usually with an exerted stem. *Bulb* ovoid or oblong-ovoid, often 2—3 cm. long, the blackish gummy tunics pubescent with rufous

hairs at the apex. *Stem* erect, stout, leafless, usually 2—4 cm. long, with 1 or 2 semi amplexicaul scales. *Leaves* fairly numerous, terminally congested, spreading, with hirsute petioles up to 3 cm. long : leaflets 3, sessile, cuneate-oblong, entire at the apex, conspicuously undulate at the margins, 1—1·5 cm. long, pilose on *both* sides, green or brown, often black-dotted. *Peduncles* terminal, 1-flowered, 2—4 cm. long, hirsute, with 2 small opposite bracts set at the upper articulation near the middle. *Sepals* lanceolate, 4·5—5·5 mm. long, hirsute, inconspicuously callose at the apex. *Corolla* 1·5—2 cm. long, glabrous, rather pale yellow, with a broadly funnel-shaped tube : petals 8—12 mm. broad, the obliquely obovate limb twice as long as the claw, with a broad band of minute purple dots and streaks along the outer margin. *Filaments* (connate part included), the longer 3·5—6·5 mm. long, minutely glandular, with short teeth. *Ovary* pubescent and callose on the upper half, the chambers about 9-ovuled. *Styles* pubescent below, glandular above (Fig. 1).

Hab. Cape Province : Van Rhyn's Dorp Div., between Bitterfontein and Ecnokoker, *Zey.* 230, *type*, Bitterfontein, *Salter* 932A. Flowers May—June.

There are two distinct forms which grow in association, some plants having green leaves and others brown. These have retained their distinctive leaf colours in cultivation.

Var. β **glandulosa** Salter, var. nov. *Folia* brunnea : foliola supra leviter pubescens, infra glabra, margine pilis brevibus capitatis ciliata. *Partes herbaceae* pilis capitatis satis dense pilosae.

Hab. Cape Province : Van Rhyn's Dorp Div., Bitterfontein, *Salter* 932B (*type* in Bolus Herbarium).

Leaves brown : leaflets thinly pubescent above, glabrous below, ciliate with capitate hairs, densely clothed with capitate hairs on all the other herbaceous parts.

II. O. STENOPTERA Turcz.

O. stenoptera Turcz. (an earlier name than *O. glauco-virens* Sond. in the Flora Capensis) differs from the *ambigua* group in many respects. The hairs are pluricellular and rather thicker and the peduncles are without an upper articulation, the bracts being long, alternate and partly embracing the calyx. The bulb is quite different and as will be seen from the full descriptions, there are different floral characters. The petioles are somewhat flattened but by no means winged, though when dried and pressed they may appear to be so. The name is therefore not appropriate.

Sonder's description of the hairs in *Zey.* 239 (of which I have examined three sets) is quite inaccurate, for all the hairs are pluricellular and none glandular. The glaucous colour of the upper surface of the leaflets is only observable in dried specimens and even then is not constant. I cannot understand how Sonder came to liken the leaves to those of *O. tenella* Jacq., for they do not resemble them in the least.

O. stenoptera Turcz. emend. Salter (*O. glauco-virens* Sond.). Rather robust, 4—10 cm. high, the stem not exserted, the herbaceous parts more or less clothed with pluricellular hairs. *Bulb* with a contractile root (mature), ovoid-conical, acute at the apex, up to 5 cm. long, with vertically nerved splitting brown tunics, the younger elongate, narrowly lanceolate in outline with a slender apical beak and pale brown shining crinkled tunics. *Rhizome* 30 cm. or more long. *Leaves* basal, often 8—15 : petioles usually 2—4 cm. long, slightly flattened, pilose : leaflets 3, sessile, broadly obcordate, widely cuneate at the base, the medial 0.6—1.5 cm. long, the lateral oblique, always rather smaller, glabrescent above, sometimes sparsely pilose below, closely ciliate, often punctate with small brownish calli. *Peduncles* numerous, 1-flowered, 2—2.5 cm. long, pilose, with 2 long alternate linear bracts usually partially embracing the calyx. *Sepals* broadly lanceolate, 5—7 mm. long, densely ciliate. *Corolla* 1.5—2.5 cm. long, yellow, with a rather widely funnel-shaped tube : petals broadly cuneate, rotund or obliquely truncate at the apex, slightly attenuate into a short claw at the base. *Filaments* (connate part included) the shorter 2—5 mm., the longer 4—7 mm. long, glandular, rather broadly toothed, the longest recurved at the apex. *Ovary* glandular-pilose, ecallose, the chambers 2-ovuled.

Hab. Cape Province : Van Rhyn's Dorp Div., between Eenkoker and Bitterfontein, *Zey.* 239 (type in Herb. Sond.), *Zey.* 242 *ex parte* (in S. A. Museum) ; Bitterfontein district, *Salter* 922A, 5349, 6638.

This species is a very close affinity of *O. aurea* Schlechter, a plant which is abundant in the Clanwilliam district and which has an exactly similar root system. I retain the latter as a species on the following differences. Petioles not flattened ; petals almost cuneate ; longest filaments not recurved at the apex ; ovary with rows of small orange-coloured calli between the chambers on the upper half. *O. aurea* is extremely variable in its degree of hairiness, specimens from about Citrusdal usually having entirely glabrous leaves. I consider *O. Maderi* Bolus f. to be merely an etiolated form of *O. aurea*, with oval-oblong leaflets. *O. Louisae* Salter though quite distinct, is also affiliated to the same section.

The bulbs in *O. stenoptera* and its varieties are all similar and have contractile roots, the mature flowering bulbs lying at a great depth.

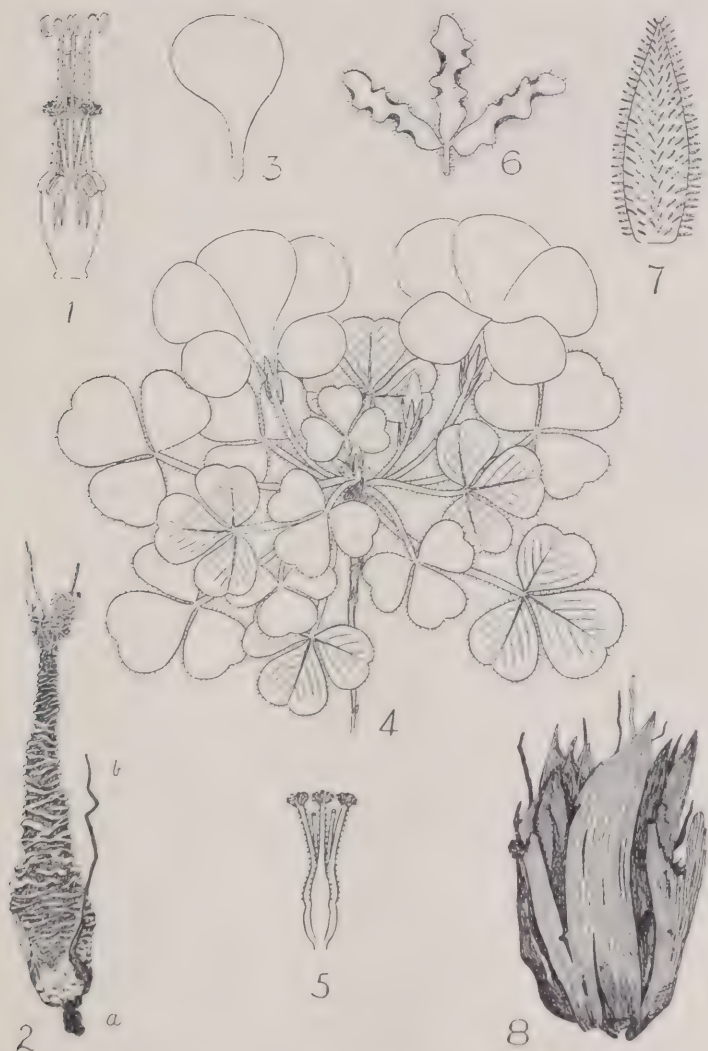


FIG. 2. *Oxalis stenoptera* Turcz., var. *alba* Salter. 1. Androecium $\times 6$. 2. A young bulb, showing (a) the shrivelled remains of the contractile root at the base and (b) the previous year's intercalary elongation of the rhizome on which the bulb was formed, natural size. 3 and 4. Petal and plant, natural size. 5. Gynoecium $\times 6$. 6. Leaf of var. *undulata* $\times 2$. 7. Sepal $\times 6$. 8. A mature bulb, natural size (Salter 1588). Del. T. M. Salter.

The lower part of the rhizome is thread-like and easily broken and the bulbs are consequently very difficult to obtain. They grow in hard soil and long and patient work with a crowbar is necessary.

Var. β **alba** Salter, var. nov. *Partes herbaceae* pilis pluricellularibus et capitatis pilosae. *Caulis* non exsertus vel in umbrosis valde exsertus efoliatus. *Corolla* alba, tubo luteo, angustiore (Fig. 2).

Hab. Van Rhyn's Dorp Div., Bitterfontein district, Salter 950 (type in Bolus Herbarium), 945, 1588, 2512, 2515, 5335, 6637 : Namaqualand. Khamieskroon, 1538.

Corolla white with a rather narrower yellow tube : petals with a narrow claw. Sometimes producing a leafless stem in shady situations.

Frequently found in seasonal stream beds and, under favourable conditions, larger in all parts than the typical form, the leaves in luxuriant specimens sometimes cuneate-obovate.

Var. γ **undulata** Salter, var. nov. *Caulis* non exsertus, vel in umbrosis valde exsertus, robustus, efoliatus. *Folia* numerosissima : foliola oblonga, ad apicem conduplicativo-falcata, margine valde undulata, supra glabra, epunctata. *Corolla* flava, 2—3 cm. longa, tubo concolore late infundibuliforme.

Hab. Van Rhyn's Dorp Div., Nieuwerust district, Salter 5339 (type in Bolus Herbarium), 2514, 4614, 5342 : Karee Berge, Schlechter 8197 (distributed as *O. crispula* Sond.).

Stem not exserted, or in shade well exserted, robust and leafless. Leaves very numerous : leaflets oblong, conduplicate-falcate towards the apex, the margins undulate, glabrous above, undotted. Corolla yellow, 2—3 cm. long, with a rather wide tube.

This plant bears a remarkable superficial resemblance to *O. crispula* Sond., from which it is distinguished by its bulb, pluricellular hairs, more numerous leaves, long bracts, usually embracing the corolla, larger flowers, recurved longer filaments and 2-ovuled ovary chambers.